Claim Amendments and Listing of Claims:

Please amend claim 1 as follows:

1. (Currently amended) A digital online active test - plant protection system (DOAT – PPS) in a nuclear power plant, comprising:

a test generating computer (TGC) ~~for generating~~ that generates a test input for self-diagnosis, said test input being inserted between actual safety parameters during normal operation as a test parameter and a test signal position bit indicating position information of the test input;

a trip algorithm computer (TAC) ~~for receiving~~ that receives the safety parameters through said TGC from a plurality of measuring channels which are physically and electrically isolated from each other and then comparing the safety parameters and predetermined limit values of the safety parameters to determine a trip state of the safety parameters, if there is a test input by said TGC;

a voting algorithm computer (VAC) ~~for receiving~~ that receives a trip state of each of the safety parameters determined by said TAC in each of the channels, ~~determining~~ determines a final state of each of the safety parameters and then ~~outputting~~ outputs the result; and

a pattern recognition computer (PRC) ~~for expecting~~ that expects a signal pattern to be input from said VAC by using the test signal position bit which is input through the VAC from the TGC, ~~comparing~~ compares the signal pattern on a one to one basis with the result determined by said VAC, and then if the signal pattern and the result are not consistent, ~~determining~~ determines to trip the reactor.

2. (canceled).

3. (canceled)

4. (canceled)

5. (Previously presented) A digital online active test plant protection method in a nuclear power plant, comprising:

a first step of generating, in a test generating computer (TGC), a test input for self-diagnosis, said test input being inserted between actual safety parameters during normal operation as a test parameter and a test signal position bit indicating position information of the test input;

a second step of receiving, in a trip algorithm computer (TAC), the safety parameters through said TGC from a plurality of measuring channels which are physically and electrically isolated from each other and then comparing the safety parameters and predetermined limit values by the safety parameters to determine a trip state of the safety parameters, if there is a test input in said first step;

a third step of receiving, in a voting algorithm computer (VAC), a trip state of each of the safety parameters determined by said second step in each of the channels, determining a final state of each of the safety parameters and then outputting the result; and

a fourth step of expecting, in a pattern recognition computer (PRC), a signal pattern to be input from said VAC by using the test signal position bit which is input through the VAC from the TGC, comparing the signal pattern on a one to one basis with the result determined by said third step, and then if the signal pattern and the result are not consistent, determining to trip the reactor.

6. (canceled)

7. (Previously presented) A recording medium readable by a computer and on which a program is recorded, said program executing:

a first step of generating, in a test generating computer, a test input for self-diagnosis, said test input being inserted between actual safety parameters during normal operation as a test parameter and a test signal position bit indicating position information of the test input;

a second step of receiving, in a trip algorithm computer (TAC), the safety parameters through said TGC from a plurality of measuring channels which are physically and electrically isolated from each other and then comparing the safety parameters and predetermined limit values of the safety parameters to determine a trip state of the safety parameters, if there is a test input in said first step;

a third step of receiving, in a voting algorithm computer (VAC), a trip state of each of the safety parameters determined by said second step in each of the channels, determining a final state of each of the safety parameters and then outputting the result; and

a fourth step of expecting, in a pattern recognition computer (PRC), a signal pattern to be input from said VAC by using the test signal position bit which is input through the VAC from the TGC, comparing the signal pattern on a one to one basis with the result determined by said third step, and then if the signal pattern and the result are not consistent, determining to trip the reactor.